



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,640	07/29/2003	William Dale Jones	SSI-08200	8274

28960 7590 09/06/2007  
HAVERSTOCK & OWENS LLP  
162 N WOLFE ROAD  
SUNNYVALE, CA 94086

EXAMINER
----------

STINSON, FRANKIE L

ART UNIT	PAPER NUMBER
----------	--------------

1746

MAIL DATE	DELIVERY MODE
-----------	---------------

09/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/630,640

**Applicant(s)**

JONES, WILLIAM DALE

**Examiner**

FRANKIE L. STINSON

**Art Unit**

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 31-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 and 40-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 7/30/2007.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Art Unit: 1746

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 8-16, 19, 20, 23, 25, 27-30 and 40-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinath et al. (U. S. Pat. No. 6,951,765) in view of Japan'679 (Japan 7-24679).

Re claims 1, 8, 9, 15, 16, 19, 20 and 23, Gopinath is cited disclosing an apparatus for use in a system for supercritical processing of an object with a fluid wherein the process includes cleaning (col. 6, lines 7-24) and rinsing (col. 4, line and col. 10, line 59, where "water" is employed and is inherently a rinsing fluid) comprising:

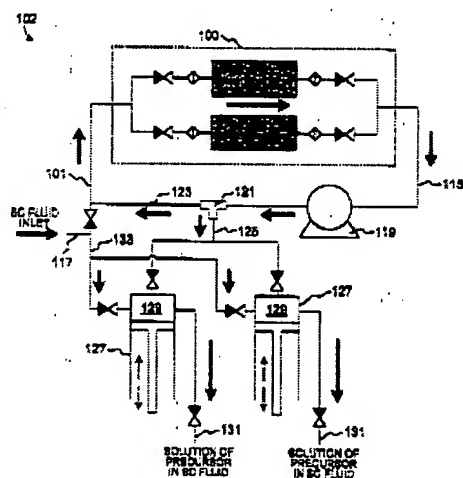


Figure 1B

means (129, see fig. 1B ) for injecting a processing chemistry (the fluid in line 115) into the system for supercritical processing, including means for starting and means (syringe pump 129, 129) for stopping the means for injecting wherein the means

for starting and the means for stopping comprises a flow-control means; and

means (check valve 131, see figs below) for substantially preventing fluid from re-entering the means for injecting during supercritical processing

means for injecting a second chemistry (col. 8, lines 25-33) for injecting a second chemistry into the system for supercritical processing, wherein the second chemistry is injected through an injection port separate from the means for injecting a processing chemistry into the system for supercritical processing, that differs from the claims only in the recitation of the flow control means being comprised of at least one of a valve, a pneumatic actuator, an electric actuator, a hydraulic actuator, and a micro-electric actuator. Although not shown in Gopinath, means must obviously be provide for the pump (120) to operate and is therefore considered to be inherent. Nonetheless, Japan'679 discloses that is old and well known to provide a control means as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the arrangement of Gopinath, to include control means as taught by Japan'679, for the purpose of precisely controlling the injection of the additive. In regard to the other fluids as claimed in claims 40-45; it should be noted that the device of Gopinath is structurally capable of employing various fluids depending upon the desired cleaning process.

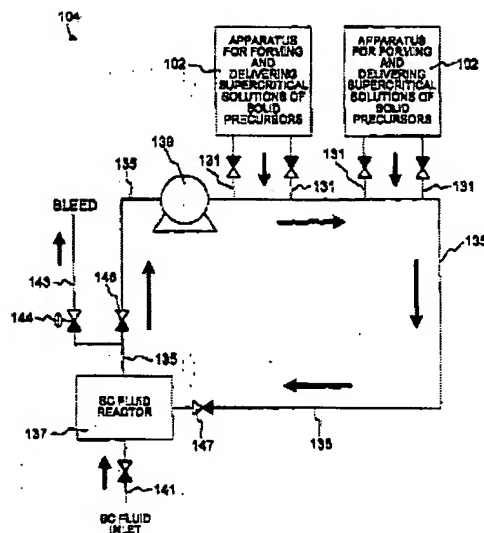


Figure 1C

Re claim 30 for

example, note that Gopinath discloses a supercritical processing system for processing a semiconductor wafer with a fluid (see abstract), the fluid being from a fluid source (as at 141, see fig. 1C), the system comprising:

- a. a circulation loop (135) coupled to a high-pressure processing chamber (137); and
- b. an inlet line (as at 131) for introducing the fluid into the circulation loop, the inlet line including:
  - i. an inlet port in the circulation loop;
  - ii. a back-pressure regulator (unnumbered check valve in line 131) coupled to the inlet port;
  - iii. a pump (119, see fig. 1B) for compressing the fluid to form a pressurized fluid;

iv. a first line (125) for transferring the pressurized fluid from the pump to the back-pressure regulator, the first line configured to maintain a uni-directional flow of the pressurized fluid from the pump towards the back-pressure regulator; and

v. a second line (101, 115, see fig. 1B) for transferring a quantity of the fluid from the fluid source to the pump, the second line configured to maintain a uni-directional flow of the fluid from the fluid source to the pump; and

c. a second inlet line for introducing a second chemistry into the circulation loop (col. 8, lines 25-33). The use of water as noted above is to inherently a rinsing process. Re claims 10-14, 25, 27, 28 and 29, Gopinath discloses the injecting, chemistry, integrated circuits and solvents as claimed.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-5, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinath et al. in view of DeYoung et al. (U. S. Pat. No.6,782,900). Claims 2, 3, 17 and 18 define over Gopinath only in the recitation of the predetermine pressure range as claimed. DeYoung is cited disclosing in a supercritical processing device (see abstract), the arrangement of employing a predetermined pressure range as claimed (col. 17, lines 18-21). It therefore would have been obvious to one having ordinary skill in the art to modify the device of Gopinath, to employ a predetermine pressure range as taught by DeYoung, since it is old and well known in cleaning

devices to employ various pressures depending upon the type of contaminant to be removed, the type of object to be treated or the material used to clean the object for enhancing the cleaning process. Re claims 4 and 5, Gopinath discloses the back-flow prevention means as claimed.

4. Claims 6, 7, 21, 22, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopinath et al. in view of Fan et al. (U. S. Pat. No. 5,620,524).

Claims 6, 7, 9, 21, 22, 24 and 26 define over Gopinath only in the recitation of the flow-control means/back-pressure regulator as claimed. Fan (as at 10, 11) discloses the flow-control means as claimed. It therefore would have been obvious to one having ordinary skill in the art to modify the device of Gopinath, to include flow-control means as taught by fan, for the purpose of having the cleaning process operated fully automatic mode, thereby removing active human involvement and for precisely controlling the delivery of fluids to the chamber.

5. Applicant's arguments filed July 19, 2007 have been fully considered but they are not persuasive. Applicant argues that the Gopinath reference fails to disclose the second chemistry, however, contrary to applicant's arguments, Gopinath does in fact teach the second chemistry as noted above. As for the specific fluids, the recitation of the specific fluids/liquids is not a structural limitation on the claimed apparatus.

Consequently, it is of no moment whether the applied prior art discloses the specific fluids as claimed as long as the apparatus of the applied prior art is capable of employing the fluids, then the applied prior art apparatuses meet the requirements of the claimed feature. There has not been established on this record,

Art Unit: 1746

any structural distinction between apparatus within the scope of the claim subject matter and the apparatuses fairly described by the applied prior art. As for the secondary references, DeYoung was never cited to teach the rinsing or washing of a fluid body mere the operating pressure as claimed to be old and well known. This is also applicable to the Fan reference since Fan was merely cited to teach control means as noted above. All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

**6. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

**7.** Any inquiry concerning this communication or earlier communications from the examiner should be directed to **FRANKIE L. STINSON** whose telephone number is



Art Unit: 1746

(571) 272-1308. The examiner can normally be reached on M-F from 5:30 am to 2:00 pm and some Saturdays from approximately 5:30 am to 11:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached on (571) 272-1700. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fls



FRANKIE L. STINSON  
Primary Examiner  
GROUP ART UNIT 1746